west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475 • FAX: (304) 926-0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3127A ***(After-the-Fact)***
Plant ID No.:	057-00009
Applicant:	Bardon, Inc. dba Aggregate Industries
Facility Name:	Keyser
Location:	Keyser, Mineral County
NAICS Code:	327320
Application Type:	Modification
Received Date:	March 04, 2014
Engineer Assigned:	Thornton E. Martin Jr.
Fee Amount:	$1,000.00
Date Received:	September 25, 2013
Complete Date:	April 18, 2014
Applicant Ad Date:	March 04, 2014
Newspaper:	*News Tribune*
UTM's:	Easting: 671.972 km Northing: 4365.343 km Zone: 17
Description:	Bardon, Inc. dba Aggregate Industries (Aggregate) is replacing the aggregate batcher B5/PE (02/14) and proposing to replace the existing aggregate bins.

BRIEF HISTORY

Applicant had originally filed an application for modification (R13-3127) on September 24, 2013 along with their application fee. The application was deemed incomplete and the applicant notified of the information needed. The applicant responded, stating that they would hand over the permit application process to their consultant, Potesta & Associates, Inc. Application (R13-3127) was withdrawn on February 24, 2014. The fee of $1,000 was held on account awaiting the re-submission of the application. The re-submitted application (R13-3127A) by Potesta & Associates, Inc. was received on March 04, 2014.

PROCESS DESCRIPTION

Bardon, Inc. dba Aggregate Industries (Aggregate) The facility (RMC) was constructed in 1964 and was acquired by Aggregate in 2011. Silos and conveyors were replaced/added in 1986 and a hot water heater was replaced/added in 1988. The aggregate batcher was replaced in February 2014. Applicant is proposing to replace the existing aggregate bins.

RMC is a batch, truck mix concrete plant. Aggregates are transported to the site by truck and transferred (TP1/MDH) to open stockpile SP1/N. SP1/N consists of verious stone/sand sizes in multiple piles. An endloader transfers (TP2/MDH) material to aggregate bin H1/PE. Materials transfer (TP3/PE) from H1/PE to belt conveyor BC1/N and transferred (TP4/PE) to aggregate bins (B1/PE, B2/PE, B3/PE and B4/PE) then to the aggregate batcher B5/PE (TP5/PE). Material leaves B5/PE (TP6/PE) and is conveyed

by BC2/N to truck via a chute (TP11/BH). Cement and ProAsh/Fly ash are delivered by truck and pneumatically transferred (TP12/BH) to cement silos S1/BH and S2/BH and fly ash silo S3/BH. S1/BH transfers (TP9/BH) to cement batcher B6/BH. S2 and S3 transfer (TP7/FE, TP7A/FE) to screw conveyor SC1/FE to B6/BH (TP8/BH). B6/BH transfers cement/fly ash to truck (TP10/BH) via chute. Hot water from HWH1 is added to the truck mix to produce concrete.

The facility utilizes concrete additive mixtures which do not contain regulated air pollutants. A hydrochloric acid (HCl) solution is used for truck washing and pH adjustments. HCl is a listed hazardous air pollutant (HAP). The Applicant believes the HCl is neutralized during use and, therefore, is not released to the air.

See the following tables for description, maximum throughput, control equipment, and maximum storage for all permitted equipment at the Keyser facility:

Table 1: Equipment Summary (R13-3127A)

Equipment ID No.	Description	Installation / Modification Date	Type and Date of Change	Maximum Capacity		Control Equip-ment[1]
				TPH	TPY	
Equipment						
H1	10 Ton Feed Hopper	1986	No Change	----	234,000	PE
B5	~18 Ton Aggregate Batcher	2014	Replacement	200	234,000	PE
B6	~4 Ton Cement Batcher	1986	No Change	200	46,500	BH
HWH1	Power Flame CR2G Direct Fired Water Heater – (0.84 MMBtu/hr)	1988	No Change	5 gal/hr	12,000 gal/yr	N
Conveyors						
BC1	Belt Conveyor	1986	No Change	200	234,000	N
BC2	Belt Conveyor	1986	No Change	200	234,000	N
SC1	Screw Conveyor (baghouse dust)	1986	No Change	40	46,500	FE
Storage						
SP1	20,000 Ton Aggregate/Sand Stockpile	1986	No Change	----	234,000	N
B1	30 Ton Aggregate/Sand Bin	2014	Replacement	200	58,500	PE
B2	30 Ton Aggregate/Sand Bin	2014	Replacement	200	58,500	PE
B3	30 Ton Aggregate/Sand Bin	2014	Replacement	200	58,500	PE
B4	30 Ton Aggregate/Sand Bin	2014	Replacement	200	58,500	PE
S1	50 Ton Cement Silo	1986	No Change	40	36,000	BH
S2	50 Ton Cement Silo	1986	No Change	40		BH
S3	40 Ton Fly Ash Silo	1986	No Change	40	10,500	BH

[1] PE - Partial Enclosure; FE - Full Enclosure; BH - Baghouse; N - None

SITE INSPECTION

Karl L. Dettinger of the Compliance and Enforcement section for the Eastern Panhandle Regional Office performed a targeted, un-announced full on-site inspection on March 21, 2013. The facility received a score of 30 - Full Compliance. Based on the size and scope of the proposed modification, the writer deemed that a site visit was not necessary at this time.

Directions given in application: From US 220 South in Keyser, turn right onto Stoney Run Road. Travel 0.25 miles and turn right into Keyser RMC.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emission calculations for this facility were performed by Potesta & Associates, Inc. (Consultant) and reviewed by the writer for completeness and accuracy. Emission factors from AP-42 Section 1.3 Fuel Oil Combustion 9/98 was used to calculate emissions for the Hot Water Heater. Emission factors from AP-42 Section 11.2.3 was utilized to calculate the stockpile emissions. The Emission Factor Equation from AP-42 Fifth Edition, Section 13.2.1 Paved Roads was used to calculate fugitive emissions for Paved Haulroads.

The Hot Water Heater is a 0.84 MMBtu/hr unit that is fueled by #2 Diesel Fuel. Emissions are summarized in the following tables 2a and 2b:

Table 2a: HWH1 Emissions (R13-3127A)

Source	Particulate Matter		Particulate Matter-10		Volatile Organic Compounds		Sulfur Dioxide		Nitrogen Oxides		Carbon Monoxide	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Total	0.01	0.02	0.01	0.01	0.01	0.01	0.04	0.05	0.10	0.12	0.03	0.03

Table 2b: HWH1 Total HAP Emissions (R13-3127A)

Source	HAP	
	lb/hr	TPY
Total	0.0008	0.0008

The proposed emissions for the Keyser facility are outlined in table 3:

Table 3: Proposed emissions (R13-3127A)

Pollutant	**Maximum Point Source Emissions**		**Maximum Fugitive Emissions**		**Facility Total Emissions**	
	(lb/hr)	**(ton/yr)**	**(lb/hr)**	**(ton/yr)**	**(lb/hr)**	**(ton/yr)**
Total Particulate Matter	6.90	4.00	60.95	34.97	67.85	38.97
Particulate Matter-10	3.03	0.30	11.93	7.05	14.96	8.62
Particulate Matter-2.5	0.50	0.12	0.41	0.29	0.91	0.59
Volatile Organic Compounds	0.01	0.01	Not Applicable		0.01	0.01
Sulfur Dioxide	0.04	0.05			0.04	0.05
Nitrogen Oxides	0.10	0.12			0.10	0.12
Carbon Monoxide	0.03	0.03			0.03	0.03
Total HAPs	0.0008	0.0008			0.0008	0.0008

REGULATORY APPLICABILITY

The proposed modification of an RMC plant is subject to the following state and federal rules:

45CSR2 *To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers*

The purpose of this rule is to establish limitations for smoke and particulate matter which are discharged from fuel burning units. Per this rule, Section 2.14 defines an indirect heat exchanger as a device that combusts any fuel and produces steam or heats water or any other heat transfer

medium. Section 2.10 defines a fuel burning unit as any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. The facility is exempt from sections 4, 5, 6, 8, and 9 because the hot water heater (0.84 MMBtu/hr) is below 10 MMBtu/hr. The facility will be subject to the opacity requirements in this rule, which is 10% opacity based on a six minute block average.

45CSR7 To Prevent and Control Particulate Matter Air Pollution From Manufacturing Processes and Associated Operations

The facility is subject to the requirements of 45CSR7 because it meets the definition of "Manufacturing Process" found in subsection 45CSR7.2.20. The facility should be in compliance with Subsection 3.1 (no greater than 20% opacity), Subsection 3.7 (no visible emissions from any storage structure pursuant to subsection 5.1 which is required to have a full enclosure and be equipped with a control device), Subsection 4.1 (PM emissions shall not exceed those allowed under Table 45-7A), Subsection 5.1 (manufacturing process and storage structures must be equipped with a system to minimize emissions), Subsection 5.2 (minimize PM emissions from haulroads and plant premises) when the particulate matter control methods and devices proposed within application R13-3127A are in operation.

According to Table 45-7A, for a type 'a' source with a maximum process weight rate of 36,000 lb/hour, the maximum allowable emission rate is 26 lb/hour of particulate matter. The maximum emission rate is 6.90 lb/hour of particulate matter according to calculated emissions in fact sheet R13-3127A.

45CSR10 To Prevent and Control Air Pollution from Emissions of Sulfur Oxides

The purpose of this rule is to prevent and control air pollution from the emission of sulfur oxides. Per this rule, Section 2.9 defines an indirect heat exchanger as a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. Section 2.8 defines a fuel burning unit as any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. This facility is exempt from sections 3 and 6 because the hot water heater (0.84 MMBtu/hr) is below 10 MMBtu/hr. According to section 4.1., sulfur dioxide concentrations must fall below 2,000 parts per million by volume.

45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation

The proposed modification is subject to the requirements of 45CSR13 because it results in the potential to discharge emissions greater than 6 pounds per hour and 10 TPY of a regulated air pollutant. The applicant submitted the $1,000 application fee and published a Class I legal advertisement in the *News-Tribune* on March 04, 2014.

45CSR22 Air Quality Management Fee Program

45CSR22 applies to all registrants which are minor sources and no NSPS applies. The affected registrants will be subject to the fee schedule set forth in 45CSR22. They are also required to keep their Certificate to Operate status current.

40CFR63 Subpart JJJJJJ *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*

The hot water heater is a Power Flame Model CR2G, Serial Number 119677969. It is subject to this subpart and is an affected source and is an existing source because construction or reconstruction of the affected source commenced on or before June 4, 2010.

Hot water heater means a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous, liquid, or biomass fuel and hot water is withdrawn for use external to the vessel. Hot water boilers (i.e., not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour are included in this definition. The 120 U.S. gallon capacity threshold to be considered a hot water heater is independent of the 1.6 million Btu per hour heat input capacity threshold for hot water boilers. Hot water heater also means a tankless unit that provides on-demand hot water.

Existing oil-fired boilers with heat input capacity of equal to or less than 5 MMBtu/hr must conduct an initial tune-up as specified in §63.11214, and conduct a tune-up of the boiler every 5 years as specified in §63.11223.

The proposed modification of an RMC batch plant will not be subject to the following state and federal rules:

45CSR30 *Requirements for Operating Permits*

The facility will have a potential to emit 0.30 TPY of a regulated air pollutant (PM_{10}), not including fugitive emissions, which is less than the 45CSR30 threshold of 100 TPY for a major source.

AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling was not performed due to the size and proposed location of this facility. This facility will be located in Mineral County, WV, which is currently designated as in attainment for $PM_{2.5}$ (particulate matter less than 2.5 microns in diameter).

MONITORING OF OPERATIONS

For the purposes of determining compliance with maximum throughput limits, the applicant shall maintain certified daily and monthly records. An example form is included as Appendix A to Permit R13-3127A. An example form for the Monthly Opacity Testing is included as Appendix B to Permit R13-3127A. An example form for the Diesel Fuel Use is included as Appendix C to Permit R13-3127A. The Certification Of Data Accuracy statement shall be completed within fifteen (15) days of the end of the reporting period. These records shall be maintained on-site for at least five (5) years and be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.

RECOMMENDATION TO DIRECTOR

The information contained in the permit application R13-3127A indicates that compliance with all applicable state rules and federal regulations should be achieved when all proposed control methods are in operation. Therefore, the granting of a permit to Bardon, Inc. for the modification of a Ready Mix Concrete plant designated as Keyser Plant, near Keyser, Mineral County, West Virginia, is hereby recommended.

Thornton E. Martin Jr.
Permit Engineer

April 18, 2014
Date